WHAT IS CLAIMED IS:

1. A combustor for a gas turbine comprising:

an annular array of outer fuel nozzles arranged about a center axis of the combustor;

a center fuel nozzle aligned with the center axis, wherein the center fuel nozzle is substantially smaller than each of the outer fuel nozzles, wherein

said combustor further comprises a pre-mix combustor operating mode in which the center nozzle receives a fuel rich air-fuel mixture as compared to a fuel mixture applied to the outer fuel nozzles.

2. A combustor as in claim 1 wherein the outer fuel nozzles are each of a similar size.

3. A combustor as in claim 1 wherein the center nozzle further comprises two concentric tubes.

4. A combustor as in claim 1 wherein the center nozzle further comprises a plurality of concentric tubes having outlet ends, and said ends form a bluff body for flame stabilization in a combustion zone of the combustor.

5. A combustor as in claim 1 wherein the center nozzle further comprises an outer tube, wherein an end lip of said outer tube is extended to form a recirculation zone for a flame front adjacent an end of the center nozzle.

6. A combustor as in claim 1 wherein the center nozzle further comprises a bluff body coaxial to the nozzle and recessed with respect to an outer annular lip of the nozzle.

7. A combustor as in claim 1 wherein the center nozzle includes fuel passages consisting of a premix gas fuel passage and a diffusion gas passage, and said outer fuel nozzles each include fluid passages comprising a premix gas fuel passage and a diffusion gas passage.

8. A combustor as in claim 1 wherein the center nozzle has an outer diameter 85% or less than a diameter of each of the outer fuel nozzles.

9. A combustor as in claim 1 wherein the combustor is a single stage combustor.

10. A combustor for a gas turbine comprising:

an annular array of outer fuel nozzles arranged about a center axis, wherein each of said outer fuel nozzle comprises a gaseous fuel passage and a liquid fuel passage,

a center fuel nozzle aligned with the center axis and having a fuel passage consisting of at least one gaseous fuel passage, wherein the center fuel nozzle is substantially smaller than each of the outer fuel nozzles, and

a pre-mix combustor operating mode in which the center nozzle receives a fuel rich air-fuel mixture as

compared to a fuel mixture applied to the outer fuel nozzles.

11. A combustor as in claim 10 wherein the outer fuel nozzles are each of a similar size.

12. A combustor as in claim 10 wherein the center nozzle comprises two concentric tubes and said gaseous fuel passage is between said concentric tubes.

13. A combustor as in claim 10 wherein the center nozzle further comprises a bluff body end for flame stabilization in a combustion zone of the combustor.

14. A combustor as in claim 10 wherein said center nozzle forms a pilot light for the combustor.

15. A combustor as in claim 10 wherein the center nozzle further comprises an outer tube, wherein an end lip of said outer tube is extended to form a recirculation zone for a flame front adjacent an end of the center nozzle.

16. A combustor as in claim 10 wherein the center nozzle further comprises a bluff body coaxial to the nozzle and recessed with respect to an outer annular lip of the center nozzle.

17. A combustor as in claim 10 wherein at least one gaseous fuel passage in the center nozzle comprises a premix gas fuel passage and a diffusion gas passage, and said outer fuel nozzles each include fluid passages

comprising a premix gas fuel passage and a diffusion gas passage.

18. A combustor as in claim 10 wherein the combustor is a single stage combustor.

19. A method for combustion in a combustor in a gas turbine, wherein said combustor comprises an annular array of outer fuel nozzles arranged about a center axis and a small center fuel nozzle aligned with the center axis, said method comprising:

a. fueling the center fuel nozzle with a fuel-rich mixture of gaseous fuel and air and fueling the outer fuel nozzles with a fuel-lean mixture of fuel and air;

b. igniting the fuel-rich mixture injected by the center fuel nozzle while the fuel-lean mixture injected by the outer combustors is insufficient to sustain ignition;

c. stabilizing a flame on the center fuel nozzle while the outer fuel nozzles inject the fuel-lean mixture;

d. staging fuel to the outer nozzles by increasing a fuel ratio of the fuel-lean mixture, and

e. after the outer nozzles sustain ignition, reducing fuel applied to the center nozzle.

20. A method as in claim 19 wherein the outer nozzles and center nozzles operate on substantially similar fuel-air mixtures after step (e).

21. A method as in claim 19 wherein step (b) is performed with a premix gas fuel injected by the center nozzle and steps (c) and (d) are preformed with a diffusion gas injected by the outer fuel nozzles.

22. A method as in claim 19 further comprising stabilizing a flame in front of the center nozzle by a bluff body recessed within the center nozzle.

23. A method as in claim 19 wherein a fuel rate applied to the center fuel nozzle and a fuel rate applied to each of the outer fuel nozzles are substantially similar during step (a).

24. A combustor for use in a gas turbine comprising:

an annular array of outer fuel nozzles arranged about a center axis and a small center fuel nozzle aligned with the center axis;

fuel means for supplying the center fuel nozzle with a fuel-rich mixture of gaseous fuel and air and fueling the outer fuel nozzles with a fuel-lean mixture of fuel and air;

center nozzle combustion means for combusting the fuel-rich mixture injected by the center fuel nozzle

while the fuel-lean mixture injected by the outer combustors is insufficient to sustain ignition;

flame stabilizing means for stabilizing a flame on the center fuel nozzle while the outer fuel nozzles inject the fuel-lean mixture, and

fuel staging means for staging fuel to the outer nozzles by increasing a fuel ratio of the fuel-lean mixture.

25. A combustor as in claim 24 wherein a fuel rate applied to the center fuel nozzle and a fuel rate applied to each of the outer fuel nozzles are substantially similar.

26. A combustor as in claim 24 wherein the combustor is a dual mode, single stage combustor.